More immigrants pursuing STEM careers, report says

By Tatiana Sanchez | Nov. 9, 2015 | Updated, 10:10 a.m. | Nov. 10, 2015

About 5.2 million, or 18 percent, of the country’s 29 million scientists and engineers are immigrants, according to a new study. In this file photo, an employee holds a molecular structure model of a diamond inside a laboratory. Chris Ratcliffe

A growing number of immigrants are pursuing careers in science and engineering in the United States, according to a new report by the National Science Foundation.

An estimated 5.2 million, or 18 percent, of the country’s 29 million scientists and engineers were immigrants in 2013 — up from 3.4 million, or about 16 percent, in 2003 — according to the report.

Researchers also found that a majority of the immigrants in the industry were more likely to earn post-graduate degrees than were U.S. citizens.

“If you look at the trends over time, you see an increase in immigrants’ presence,” said Katherine Hale, an analyst for the National Center for Science and Engineering Statistics and a co-author of the report. The center is a branch of the National Science Foundation.

Experts say a variety of complex and often controversial factors have contributed to this growing immigrant labor pool. It’s also an issue that has become politicized in recent years. As American companies call on government officials to bolster worker visa programs in order to
immigrant labor in this field doesn’t necessarily indicate there’s a shortage of American-born employees qualified to fill the same jobs.

“STEM (science, technology, engineering and math) salaries haven’t increased that much; we don’t really see rising wages. That would be an indication of a shortage,” he said.

The report was compiled from data collected through two biennial surveys: the National Survey of College Graduates and the Survey of Doctorate Recipients.

Those surveyed included naturalized U.S. citizens, permanent residents, and temporary visa holders. About 63 percent of the country’s STEM employees were naturalized citizens in 2013, while 22 percent were identified as permanent residents and 15 percent were temporary visa holders.

Immigrant scientists and engineers were more likely to earn master’s and doctorate degrees than their U.S.-born counterparts, according to the report.

Foreign-born individuals also earned a higher median annual salary than their U.S.-born counterparts, likely in part because of higher education levels, the report said. Foreign-born scientists and engineers reported a median annual salary of $72,000, compared with $64,000 for U.S.-born employees.

“That suggests that the immigrants do indeed have skills that Americans lack or they’re simply more effective workers and more in demand and are being rewarded,” Skrentny said.

The reasons for this shift in demographics include a cultural component, according to Judy Lee, a partner at the global immigration firm Foster LLP in Texas.

“Most of the international students in the STEM fields are coming from China and India. In each of those cultures, it’s strong to be an engineer or a doctor,” she said.

“I think the other part of the story is that we Americans need to do a better job about how to excite kids about science and math and not make it intimidating to them."

A vast majority of immigrants in the science and engineering industry, about three million, hailed from Asia, including about 950,000 from India, the report said.

Lee said that employers in the STEM field often look to hire people with a very particular skill set, and that U.S. workers don’t always possess those qualifications. “A lot of the U.S.-born workers who are out there are engineers who may not have been keeping up with the latest tools, the codes, the languages and all of that,” she said.

Foreign-born employees are often granted temporary stays in the country under the H-1B visa program, which allows U.S. employers to recruit and employ foreigners in specialty occupations.

Under the program, immigrants are granted three years of temporary stay in the U.S., which a possible renewal for three additional years. As many as 65,000 H-1B new visas are issued each fiscal year, according to U.S. Citizenship and Immigration Services. An additional 20,000 petitions are filled for individuals pursuing master’s or doctorate degrees. H1-B workers employed at institutions of higher education and nonprofit or government research-based organizations are also exempt from the cap.
Large corporations such as Qualcomm — a San Diego-based company that recruits top-tier engineers from around the world — have lobbied for expansion of visa programs for highly skilled workers.

It received its most H-1B visa approvals — about 900 — in a five-year stretch in the 2013 fiscal year, according to federal immigration data. The company was approved for 461 H-1B visas in 2014. In 2005, the company received 244 approvals.

Nearly half of STEM students at U.S. universities would need a visa to stay after graduation, according to Alice Tornquist, Qualcomm’s vice president of government affairs.

“Although our industry and other high-tech industries have grown exponentially, our immigration system has failed to keep pace. Under our current system of outdated caps and convoluted green card process, companies are hampered in hiring the talent that they need,” Tornquist said during a panel on high-skilled immigration policy in June, which was conducted by National Journal.

Russell Harrison, director of government relations at IEEE-USA, a professional society comprised of 200,000 technical professionals across the country, said there’s “ample evidence” that companies are using H-1B visas to replace Americans with foreign workers.

“H-1B workers in particular are really cheap, they’re easy to exploit, you can dismiss them at any time you want and they would have to leave the country,” he said.

Harrison said that while there are small shortages within the industry, there’s no indication that there’s a mass shortage of qualified American candidates to take up STEM careers.

Hiring foreign labor under visas, he said is a “deliberate tactic of the tech companies to lower their labor costs. And it’s a very effective one.”

Harrison, who acknowledged that foreign labor adds value to the U.S. economy, said IEEE-USA is in favor of having immigrants — not temporary visa holders — contributing to the workforce.

Unlike visa-holders who are here temporarily, immigrants are here to stay, he said.

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